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THE HISTORY AND PRESENT APPLICATION OF THE QUANTITY THEORY.

THE prolonged discussion over the so-called quantity theory of the value of money has brought the problem of prices but little nearer to a solution. The controversy, in fact, appears to be as far from even a provisional settlement as ever. It is true that recent criticisms have brought about a slight change of front on the part of those who hold to the quantity doctrine, but the general situation remains essentially unaltered. Recent monetary discussions, moreover, have directed attention very powerfully to the price question, and the quantity theory has been put forward as an easy explanation of variations in prices, and of all the phenomena which accompany these variations.

In this respect the present is closely analogous to other epochs. Variations in prices, however slight, are always of sufficient importance to demand explanation, and where changes in the circulation occur contemporaneously with these variations in prices, it is natural enough to reason directly from the one to the other, as cause and effect. For many years the quantity theory has, in nearly all periods of inflation, contraction, or monetary disturbance of any kind, been urged as affording a full explanation of such movements by referring them directly to changes in the volume of the circulation. The quantity theory is unquestionably playing no insignificant rôle in current monetary discus-

sions, but in many instances its real content and character as well as its historical evolution are mistaken or overlooked. The natural history of the doctrine, therefore, demands examination.

I

Locke was one of the first to attribute the value of money to its relative quantity.¹ In his *Considerations of Interest* he attacked the problem of the value of money as a question simply of its quantity as compared with the amount of commodities for which it is offered. Starting with the idea of money as a [sort of] counter or title to a certain aggregate of commodities,² he put forward the theory that, whereas money in itself satisfies no human want, its supposed value may be regarded as imaginary or conventional. From this he reasoned that, since the volume of commodities, in the world cannot be instantly increased or diminished, a change in the number of counters or pledges can have no influence upon commodities. The total of counters, then, whatever it might be, represents at any moment the same real quantity of values and hence the inference was naturally drawn that a change in the number of counters would directly result in an opposite change in the value of each counter or unit of money. Thus, since money itself is devoid of value and at any moment the quantity of commodities which each money-unit can command depends solely upon the number of such units, the general conclusion was reached that the "intrinsic value of silver and gold is nothing but their quantity."³ Locke thus completely neglected the fact that, although, as he had himself seen, the metals possessed a value in use, the "intrinsic value" of the metals could not depend upon exchangeability alone since without intrinsic value exchangeability could in nowise exist.⁴ Never-

¹ BODIN in his *Republique* had enunciated the doctrine in fairly distinct form. It had even been noticed by Oresme, Copernicus and others. In the little volume entitled *Britannia Languens*, as also in certain other mercantilist writings, something had been said of it. Coke and others mentioned it incidentally.

² *Consequences of the Lowering of Interest*, etc. (McCulloch's ed.), p. 233.

³ *Ibid.*, p. 233.

⁴ Cf. BONAR, *Philosophy and Political Economy*, p. 97. See also ZUCKERKANDL, *Theorie des Preises*.

theless, he did not entirely overlook the influence of commodities in fixing price. Any improvement or retrogression, indeed, in modes of production, whereby cost of production was lowered or raised, would have no effect upon price, unless the commodities in question were actually so increased or decreased; but once a change in the volumes of commodities offered for sale was brought about, the proportion between money and goods would be similarly altered.¹ In all this, he seems to have had in mind a strictly static economy where demand for commodities (as *e. g.*, food products) might be considered constant and account need be taken simply of the supply thrown on the market.²

The idea that goods might be stated in terms of one another, and that when so stated they could be referred to money as a common denominator, seems entirely to have escaped Locke, and the cost of production of the money metal he consciously neglected. In all this reasoning, however, he assumed a definite rapidity of circulation, that being, in his view, one of the elements of the money supply.³ The quantity theory, then, as Locke stated it, assumed certain invariable elements. Granted that commodities are unaltered in amount or in conditions of production, that exchanges are constant in number, that the mechanism of exchange is the same in its general character, that population and the rapidity of circulation are essentially unchanged—prices will depend upon the quantity of the money supply. And by supply seems to have been meant simply the quantity of money in circulation. This statement, of course,

¹ "The value or price of all commodities, among which money passing in trade is truly one, consisting in proportion; you alter this, as you do all other proportions, whether you increase one or lessen the other."—*Consequences of Lowering the Rate of Interest*, p. 249.

² "Money, whilst the same quantity of it is passing up and down the kingdom in trade, is really a standing measure of the falling and rising value of other things in reference to each other and the alteration in price is truly in them only. But if you increase or lessen the quantity of money current in traffic in any place, then the alteration of value is in the money, and if at the same time, wheat keep its proportion of vent to quantity, money, to speak truly, alters its worth and wheat does not, though it sell for a greater or less price than it did before."—*Ibid.*

³ *Ibid.*, pp. 234 *et seq.*

proceeded upon the assumption that the volume of the circulation can be increased or diminished at will. And, since money in circulation was taken by Locke to mean money actually exchanged for goods, the quantity theory, as he enunciated it, ultimately amounted to no more than a statement that if more money is exchanged for a given volume of goods fewer goods are exchanged for a given amount or unit of money, or, in ordinary language, prices rise, and the converse. The theory was thus no more than a statement of self-evident fact. It did not even assume to be an explanation of fluctuations in prices.

The background of Locke's quantity theory is tolerably familiar. Attention to the cost of production of gold and silver and of general commodities had completely lapsed. Prices, which, before the discovery of the American gold mines, had been unusually low, had risen considerably and were now on a much higher plane than for many years had been the case. This change was almost universally ascribed solely to the increase in the quantity of the precious metals. Methods of production, distribution and exchange seemed to be substantially the same as they had been, and the diminished purchasing power of the money unit was not unnaturally attributed to the greater abundance of the money metal, for the idea of cost of production, as applied to the precious metals brought from America, seemed utterly inapt. No extended use of paper currency was possible, and the price-question seemed to have reduced itself to an axiomatic statement. As a natural consequence of the conditions just outlined, the progress made in the study of prices, immediately after Locke's time, was but small. The doctrine as he had stated it was substantially accepted, and was from time to time repeated by various minor writers on commercial subjects.

Montesquieu's treatment of the quantity theory, contained in the *Ésprit des Loïs*, was of more interest than any discussion of the subject since that given by Locke. It was no attempt at a dynamic theory of prices, but, like Locke's, was simply an effort to explain the relation existing between money and goods at any particular moment. The fundamental assumption upon

which he proceeded was that all commodities are to be regarded as a demand for money, or, in other words, are to be exchanged. Locke had not specifically made this assumption, though he had tacitly taken it for granted that there are at any time a perfectly definite number of commodities which are to be exchanged. But Montesquieu went much further than Locke, in assuming that *all goods represent* certain units of *money*.¹ Commodities are conceived to be divided into units, the number of such units in the case of each commodity being decided by the subjective value placed upon that commodity; and the volume of money in the country being similarly conceived to be subdivided into a number of portions equal to the aggregate number of the commodity units. Whatever, then, should increase the quantity of coined money would increase the amount of money exchanging for one of the commodity units and *vice versa*. It is true that Montesquieu saw clearly enough that all commodities are not daily offered for money, but he argued that they might, none the less, be regarded as a potential supply which could at any moment enter the market in exchange while hoarded coin, or bullion which might be turned into coin, might, in an analogous way, be regarded as constituting a reserved or potential demand.² His theory thus differed, in an essential respect, from that of Locke, inasmuch as Locke established a relation simply between money in circulation and goods offered for sale. The element of barter was thus practically overlooked.

The quantity theory, as stated in this rigid form, received little immediate criticism. The conditions of the period were precisely such as to foster belief in a doctrine based simply upon

¹ *Esprit des Lois*, book xxii. chap. viii. sec. 1.

² Si l'on compare la masse de l'or et de l'argent, qui est dans le monde, avec la somme des marchandises qui y sont, il est certain que chaque denrée ou marchandise en particulier pourra être comparée à une certaine portion de la masse entière de l'or et de l'argent. Comme le total de l'une est au total de l'autre, la partie de l'une sera à la partie de l'autre. Supposons qu'il n'y en ait qu'une seule qui s'achète et que le se divise comme l'argent, cette partie de cette marchandise répondra à une partie de la masse de l'argent; — mais comme ce qui forme la propriété parmi les hommes n'est pas tout à la fois dans le commerce, et que les métaux ou les monnaies qui en sont les signes, n'y sont pas aussi dans le même temps, les prix se fixeront en raison composée

the mercantilist ideas regarding money, and those who mentioned the subject of prices at all usually accepted the quantity doctrine without hesitation. Bishop Berkeley, writing in 1735, enquired, as if putting a self-evident truth, "whether *cæteris paribus* it be not true that the prices of things increase as the quantity of money increaseth and are diminished as that is diminished."¹ Hutcheson gave expression to the theory in the same rudimentary form,² and most of the writers on trade and commerce either restated it, or directly implied a belief in it. Decker declared that "according to the degree of money possessed by nations, the prices of their commodities and therewith the value of their lands rise and fall in proportion."³ Much the same was said or implied by Gee,⁴ Child,⁵ and various others.

II.

The first real attack upon the quantity theory as a doctrine of prices seems to have come from Steuart. He, of course, did not dissent from the doctrine in the empty, truismatic form in which it had been stated by Locke and the earlier writers,⁶ but he objected to the premises upon which they proceeded. He regarded coined money simply as one in the general aggregate

du total des choses avec le total des signes qui y sont aussi et comme les choses qui ne sont pas dans le commerce aujourd'hui peuvent y être demain, et que le signes qui n'y sont point aujourd'hui peuvent y rentrer tout de même, l'établissement du prix des choses dépend toujours fondamentalement de la raison du total des choses au total des signes.—MONTESQUIEU, *Esprit des Loix*, book xxii. chap vii. sec. 1.

¹ *Querist* (1751), p. 63.

² "An increase of both metals by copious mines naturally abates the value of both without any change of the names. . . . Were the mines quite drained and the quantities of these metals much diminished by the various uses of them in plate, dress, and furniture, their value would rise again, or as we should vulgarly say, the rates of goods would fall.—HUTCHESON, *A System of Moral Philosophy*, bk. ii. p. 62.

³ *An Essay on the Causes of the Decline of the Foreign Trade* (Dublin, 1751), pp. 70, etc.

⁴ *Trade and Navigation of Great Britain*.

⁵ *Discourse of Trade*.

⁶ "Were there a determinate proportion between certain quantities of gold and silver and certain quantities of other things vendible, I do not see how prices could vary while the proportion of quantity to quantity between metals and things remained the same."—STEUART (London, 1805), vol. ii. p. 272.

of commodities. Price is the ratio in which these commodities exchange against one another, though it is commonly stated or expressed in terms of money. Consequently, we must seek for a much more incisive and competent theory of prices than one which posits a static economy, and which by assuming the essential elements in the problem shirks the whole difficulty. Accordingly, he regarded the forces acting upon prices as of three sorts—those exerted by demand, supply, and the interaction between the two, or competition. These forces he classified as “(1) the abundance of the things to be valued, (2) the demand which mankind make for them, (3) the competition of the demanders and (4) the extent of the faculties of the demanders.” From these general principles, he concluded that the specie of any country might, therefore, be “augmented or diminished in ever so great a proportion, commodities will still rise and fall according to the principles of demand and competition and these will constantly depend upon the inclinations of those who have property or any kind of equivalent whatsoever to give, but never upon the quantity of coin they are possessed of.”¹

Steuart's position was thus one of revolt from the inadequate explanations of prices previously put forward. Nevertheless, it met with but scant favor, and the quantity theory in an extreme form continued to receive general approval.² It was crudely stated by Young³ and others, and even by Hume.⁴ Hume,

¹ SIR JAMES STEUART, *Enquiry into the Principles of Political Economy*, vol. i. p. 400.

² Young, in his *Political Arithmetic*, says in criticism of Steuart's position: “I never understood either M. de Montesquieu or Mr. Hume to assert or mean that very great variations would not be frequent independently of the quantity of money. Nobody could suppose they were so short-sighted as to form such ideas: . . . All such variations are perfectly consistent with the idea that the price of commodities will depend on the quantity of specie; because this idea is not relative to certain days, weeks, or months, or markets, but to general periods in which money has increased or decreased.”—Pp. 113-4.

³ “The price of commodities will depend on the quantity of specie . . . land fell in the last century . . . because there was no comparative demand; people who have not money do not add to demand. . . . Demand and competition appear to be the effects; money the cause.”—*Political Arithmetic*, pp. 114-5.

⁴ It seems a maxim almost self-evident that prices of everything depend on the

however, did not accept it as a final doctrine of prices, but practically adopted Steuart's point of view, regarding it as a statement of self-evident fact, although he made no attempt to substitute any more thoroughgoing investigation of the subject.

The treatment given to the price question by Adam Smith closely resembled in many respects that which it had received at the hands of Steuart. Smith clearly apprehended the inadequacy of the greater part of the price theories so far put forward and attacked the problem from a point of view radically different from that chosen by most of his predecessors. He set himself consciously to work out the conception of cost of production with some of the fulness it deserved. Both commodities and the money metals were referred to labor as an ultimate standard of value, alterations in the value of either being attributed to corresponding changes in cost of production. He allowed much less weight than his predecessors to the mere actual cost of the metals already in existence or in circulation.¹ Money, however, he did not regard as having any constant or stable cost of production. Hence, the money side of the price equation was to be influenced chiefly by the character of the mines which might happen to be in process of exploitation at any particular moment.² Smith thus broke utterly away from the older quantity theory as such. The price problem, in his opinion, was far too complex

proportion between commodities and money, and that any considerable alteration on either has the same effect either of heightening or lowering the price. Increase the commodities, they become cheaper ; increase the money, they rise in their value. As, on the other, a diminution of the former, and that of the latter have contrary tendencies."—HUME, "Essay on Money" (*Essays*, p. 316).

¹ "Gold and silver, like every commodity, vary in their value; are sometimes dearer and sometimes cheaper, sometimes of easier and sometimes of more difficult purchase. The quantity of labor which any particular quantity of them can purchase or command, or the quantity of other goods which it will exchange for depends always upon the fertility or barrenness of the mines which happen to be known about the time when such exchanges are made. The discovery of the abundant mines of America reduced, in the sixteenth century, the value of gold and silver in Europe to about a third of what it had been before. As it cost less labor to bring those metals from the mine to the market, so, when they were brought thither, they could purchase or command less labor."—SMITH, *Wealth of Nations*, p. 23.

² *Ibid.*

to admit of an off-hand statement in terms of gold and silver and, as he discarded the mercantilist notions regarding the relation between money and wealth, he also laid aside the analogous set of ideas which stated price simply as a function of the money metals. Nor did Smith confine his exposition of the theory solely to the case of a supposititious money-economy. Little had been said of the influence exerted upon prices by the use of paper in the place of coin, save the general statement that the use of paper implied the cancellation of an equivalent amount of the demand for money. The inferences to be drawn from these rudimentary expressions of theory were not accepted by Smith. Paper, he maintained, will have no effect upon price. With a given average rapidity of circulation, a tolerably definite volume of money is required to effect the usual total of the exchanges of any country. At a moment when this work is all effected by actual coin, if an issue of paper be made, the immediate supply of money will be too great (upon the basis of the old price level) by precisely the amount of the new issues. Part of the currency will therefore necessarily be retired from circulation. And as this retired currency will be too valuable to be kept idle, it will be exported for use in foreign countries. The paper being valueless at a distance from its place of issue, the particular portion of the currency to go abroad will be the specie formerly in circulation, so that the country will finally be left with precisely its former quantity of currency, save that this currency, instead of consisting of specie, as at first, will now consist of paper.¹ Thus, according to Smith, the quantity of money in existence is absolutely innocent of effect upon the level of prices. In any given condition of society the amount of money needed is a fairly definite quantity. More than this amount will not circulate, and consequently will have to find employment elsewhere.

III.

During the period from Smith to Ricardo little of moment was done toward solving the price problem. The monetary

¹ *Wealth of Nations*, pp. 204 *et seq.*

views of Smith received but scant attention, and the minor writers who discussed money and prices recurred to the earlier theories in their most unqualified form. Nevertheless, it was during this period preceding the promulgation of Ricardo's views that attention was most strongly called to the question of prices. The violent fluctuations in prices, especially those of cereals, which largely resulted from the many perturbing influences of the war and the multitude of disturbances to production at home, were ascribed to the numerous radical changes in the volume of the currency.¹ The depreciation of the Bank of England notes, due to insecurity of redemption and uncertainty regarding the outcome of the war, had its effect also in inflating prices, and the quantity theory was brought forward as furnishing a sufficient explanation. It was under these circumstances that Ricardo undertook to discuss prices as related to the quantity of the circulating medium.

Ricardo did not accept the ordinary statements concerning the relation of money to prices which were receiving such extended credence at the time of his writing. His theory of the value of money was substantially that of Smith—a rather extreme cost-of-production theory. The value of gold and silver, he reasoned, like that of other metals, will depend upon cost of production, or, as he expressed it, “the quantity of labor necessary to produce them and bring them to market.”² Commodities are determined in their value in a similar way where

¹ One example of the general tone of writers on prices at the time in question may be given. The doctrine is stated in *Conversations on Political Economy* (a textbook which gained some circulation) as follows: *Caroline*—“A deficiency of any article raises its exchangeable value, and consequently its price above its natural value; thus a deficiency of gold or silver would make a smaller quantity exchange for the same quantity of goods as before, and therefore a loaf of bread would sell for less money, or, in other words, would be cheaper.” *Mrs. B.*—“Yes.”

And again. *Mrs. B.*—“If money by its plenty diminish in value, less goods will be given in exchange for it, it therefore enhances the price of commodities; that is to say, their exchangeable value is estimated in money and renders them dearer. Whilst if money, by its scarcity, increase in value, more goods will be given in exchange for it; it therefore lowers the price of commodities and renders them cheaper.”—Pp. 326-7.

² *Works*, (McCulloch's ed.), p. 213.

they, within reasonable limits, may be increased in amount at will by a continuance of the usual processes of production.

Thus the value of coined money would, under free coinage, be solely determined by the relation between the costs of production of money and of the commodities for which it is offered in exchange.¹

But the particular phase of the problem to which Ricardo's attention was most strongly called was the case of an irredeemable paper currency. And, as it is his discussion upon this part of the subject that has given rise to the greatest misapprehension, it will perhaps be worth while to explain at somewhat greater length his theory of the value of irredeemable paper. It will be recalled that Smith had already put forward the view that an issue of notes, equal in amount to the volume of the metallic currency, would merely drive out the metal, since the circulation would then be redundant, and metal would be the only part of the currency that could be utilized abroad. Coin, held Ricardo, is precisely equal in value to similar weights of uncoined metal when coinage is free and mint charges do not exist.² But where a seigniorage is exacted the coin will possess a value higher than that of an equivalent amount of bullion by the amount of the seigniorage charged.³ Paper money, since the amount of labor required for its production may be neglected, is to be regarded as having practically no intrinsic value, and hence the whole exchange value of the paper must be considered a seigniorage.⁴ By sufficiently limiting the quantity of paper in circulation, Government can maintain it at a par with standard coin. The same statement will hold true of coin

¹ *Works* (McCulloch's ed.), pp. 233 *et seq.*

² "While the state coins money and charges no seigniorage money will be of the same value as any other piece of metal of equal weight and fineness."—*Ibid.*, p. 213.

³ "If the state charges a seigniorage for coinage, the coined piece of money will generally exceed the value of the uncoined piece of metal by the whole seigniorage charged, because it will require a greater quantity of labor . . . to procure it."—*Ibid.*, p. 213.

⁴ "The whole charge for paper money may be considered as seigniorage . . . it has no intrinsic value."—*Ibid.*, p. 213.

which has been debased in pure content.¹ Ricardo's attitude on this point was primarily due to his neglect of one of the essential characteristics of money. Reasoning from the supposition that the value of any commodity is alone dependent upon the amount of labor required to produce it and bring it to market, he forgot, or neglected, the fact that money is really a claim upon other commodities. Government legal-tender notes, therefore, can only have a value in so far as they are regarded as promises to pay commodities, or some sort of money which will universally command commodities. The fact that paper money may, from one point of view, be regarded as having no cost of production, however, led Ricardo to disregard the function of money just spoken of, and to treat money as if its only source of value lay in the circumstance that it is to be used as a medium of exchange. The amount of money work being supposed constant, and the price-level in terms of coin being stable, there would be no reason why the amount of money which would just exchange this definite number of commodities at the specified coin price should not retain a value equivalent to that of an equal aggregate quantity of coin.

There can be no doubt that Ricardo attached considerable importance to this theory of the value of irredeemable paper.² But it is quite clear that he did not extend it to coin, save in cases where the power of coinage rested solely in the hands of the government. In such a case, the emission of coinage being a monopoly, it would, he believed, make little difference what might be the value of the metal involved. The quantity of commodities demanding exchange and the price level being unchanged, it is clear that the number of money pieces required to perform the work of exchange will be the same. And, if there be a need for a definite number of money pieces, Ricardo held that they will still exchange for the same amount of commodities

¹ "By a limitation of its quantity, a debased coin would circulate at the value it should bear if it were of the legal weight and fineness."—*Works* (McCulloch's ed.), p. 213.

² *Ibid.*, p. 214, etc.

as before, there being no possibility of their increase at the hands of private individuals.

Thus the price theory of Ricardo was not intended to apply, even in the remotest way, to a régime of free coinage of the metals. Under such a régime his doctrine was purely that of comparative cost of production. It is owing to his looseness in the use of such terms as "money," etc., without the repetition of the limiting clauses intended to be understood, that Ricardo has so frequently been regarded as an adherent of the earlier quantity theory.¹

The Ricardian doctrine, although of such a nature as has just been outlined, was at once seized upon by contemporaries and freed from the careful limitations and restrictions which had been imposed upon it by its author. Certain inadvertent statements, where the implied qualifications had been omitted, were taken as affording support to the quantity theory, and were repeatedly restated in the effort to substantiate the claim that the continued fluctuations of English prices were attributed solely to the changes in the volume of the currency.²

This idea, however, was not accepted by Senior, who, although he, in one respect, gave in his adherence to a modified form of the quantity theory, nevertheless differed very radically

¹ Ricardo's theory as applied to the influence exerted by convertible paper upon prices was not essentially different from that stated or implied in the writings of Smith. Both believed that convertibility of paper merely acted as a check upon over-issue. Should convertible paper be over-issued it would not, in that case, depreciate, since it could immediately be redeemed and so reduced in amount. If some power could safely be trusted to regulate an irredeemable paper currency in such a way that only the amount "needed" would, at any time, be in circulation it would not at all differ in its influence from a convertible paper currency. Ricardo's point of view was essentially a national one and he does not seem to have contemplated the possible case of an issue of paper by all nations which would result in a wide disuse of money.

² The almost exclusive theory is that which refers all the phenomena of high prices from 1792 till 1819, and of the comparatively low prices since 1819, to alterations in the system of our currency, holding all other circumstances that can have had any influence to be so subordinate as not to be worth mentioning.

"These opinions . . . admit, as I conceive, of being shown . . . to be wholly erroneous."—TOOKE, *History of Prices*, vol. i. p. 2.

Musket tried to account for all the phenomena of prices by the state of circulation.—*Treatise on Currency* (see *e. g.* p. 66).

from the monetary doctrines put forward by his contemporaries. His theory, while it by no means neglected the influence of cost of production as applied to commodities, went to the extreme on the money side of the price-equation. While it is clearly recognized by Senior that changes in cost of production of commodities must affect price,¹ it is boldly reasoned that any change in cost of production of gold would affect price in a degree precisely equivalent to that of this change. "If the cost of obtaining gold should increase 5 per cent. corn would fall from three guineas to three pounds a quarter."² But, where cost of production is zero (*e. g.*, in the case of an issue of irredeemable paper), and where the conditions of the production of commodities remain the same, the quantity of money (money being taken to include notes) is the sole price regulator.³

Senior, moreover, touched upon a point which, before his time, had been neglected. This was the influence of credit, upon which subject he dimly preshadowed the treatment of Mill. He regarded credit instruments as substitutes for money. An enlargement in their use, or an increase in the rapidity of circulation of notes, or a more extensive off-setting of accounts would influence prices in the same way as an increase in the quantity of inconvertible notes in a country which possessed no metallic currency; while in a country doing business on a coin basis, this latter would simply be displaced and prices would return to their former level. Except for this theory of inconvertible paper, Senior's doctrine of prices was thus one which laid chief stress on cost of production and credit.

The interest felt by economists in the price problem did not slacken, and Tooke tried to show that prices, even in a state of things where money was the sole medium of exchange, depended far more upon changes in the relative value of commodities than they did upon any influence exerted by the quantity of money.⁴

¹ "On the Cost of Obtaining Money," *Lectures*, 1830.

² *Ibid.*, *Lectures* (1830), p. 54.

³ *Ibid.*, p. 55.

⁴ See *History of Prices*, Introduction and Conclusion.

It was not long before the controversy was renewed by the struggles over the Bank Act of 1844 and the price problem was newly discussed by a considerable number of writers. Of these the most noteworthy was, of course, Mill.

It was not until Mill took up the subject that anything approaching a solution of the price problem, adequate to meet present-day needs, was offered. Mill's theory is essentially modern and furnishes a practicable method of explaining prices by regarding them as the resultant of all the economic forces acting upon the production, distribution and exchange of commodities. It is the first treatment of prices which recognizes the existence of certain previously neglected influences and conditions which, even in many current price-theories, are overlooked or minimized. Mill's fundamental doctrine was a restatement of the earlier theory of Ricardo. He saw clearly the fact that the quantity theory in its elements amounted to no more than a truism, though it might be taken as furnishing a basis from which to work. And as Mill is, on very scanty evidence, generally supposed to have restated the quantity theory in its most unassailable form, it will be worth while to consider his monetary doctrine in some detail. Mill's ultimate standard, by which he fixed the proportions in which things will exchange for one another, was his theory of exchange value, which, reduced to its lowest terms, amounted to a theory of cost of production. Under a system of exchange, where money alone is used, the rates at which things will exchange one for another, or, in everyday language, their prices will be no different from what they would be if all transfers were solely effected by barter.¹ It is, then, only the exchange value of the medium of exchange which immediately calls for discussion. It must, however, be constantly remembered that it is, after all, only a proximate analysis of price which Mill attempts to effect by his study of the exchange value of money, the ultimate regulating factors of price being, in his opinion, identical with those which decide

¹ "The relations of commodities to one another remain unaltered by money; the only new relation introduced is their relation to money itself."—*Principles*, vol. ii. p. 24.

the cost of production of each commodity in the general aggregate.

Mill's utterances on money, then, presuppose that all other commodities remain stable in conditions and cost of production and are demanded in unchanged proportions. He studies the circumstances affecting the exchange value of money as he would study those affecting that of any commodity. And, like all other commodities, money is, he believes, determined in its exchange value ultimately by cost of production alone.¹ More immediately, it of course depends directly on demand and supply, as is the case of all other things.² Demand and supply, however, in the case of money are subject to influences somewhat different from those affecting them in the case of other commodities, demand (where coin is solely used) being, to all intents, the total amount of commodities offered for sale, while the supply is all the money in circulation at the time.³ And lastly the amount of money in circulation is composed of two distinct elements, the number of money pieces and the rapidity of circulation of these pieces. This being premised, the price question, under the static conditions presupposed, becomes extremely simple. All goods offered for sale are balanced against the monetary circulation. Any increase in this circulation must of necessity result, according to the terms of the definition, in a correspondingly higher price on the aggregate of goods, and consequently in a higher price for every unit of each commodity.⁴ In other words, if more money be expended in the purchase of a given quantity of commodities the price (quantity of money paid for these goods) will be *pro tanto* higher.⁵

¹ "Money is a commodity and its value is determined like that of other commodities, temporarily by demand and supply, permanently, and on the average, by cost of production."—*Principles*, vol. ii. p. 27.

² *Ibid.*, p. 27.

³ *Ibid.*, p. 27.

⁴ "In considering the relation between goods and money it is with the causes that operate upon all goods whatever that we are concerned. We are comparing goods of all sorts on one side with money, on the other side, as things to be exchanged against each other."—*Ibid.*, p. 27 *et seq.*

⁵ Compare Senior as quoted by Mill (*Principles*, vol. ii. p. 44): "The quantity wanted will depend partly on the cost of producing goods and partly on the rapidity

But Mill did not, as most of his predecessors had done, stop with a theory which applied solely to a circulating medium composed exclusively of coin. Far the most important part of his theory of prices concerned the influence exerted by the use of credit. Mill's real contribution to the theory of prices was the idea of purchasing power as the real immediate regulator of prices. This concept had not before his time been formulated with sufficient clearness, and it is the fundamental fact of importance in his doctrine of prices. Once his discussion of the basis of prices under a money régime had been completed along the early lines, he stated plainly his belief in the inapplicability of the doctrine to present conditions and the emptiness of price theories stated solely in terms of money. The theories of the "authorities who, still adhering to the doctrine of the infancy of society and of political economy that the quantity of money compared with that of commodities determines general prices,"¹ he neglected, as entirely destitute of meaning, and based his discussion upon the proposition that prices do not depend on money but on purchases. Since prices depend immediately upon the purchasing power offered for a certain aggregate of commodities, they are fixed simply by the quantity of commodities offered in the market for the purchase of other commodities. Of the goods so offered money is, of course, one. An increase in the quantity of money offered in the market for goods would, therefore, unquestionably affect price just as an increase in the amount of any other commodity offered would affect it and not otherwise.² The quantity of credit, then—credit being a comprehensive term implying merely the recognized possession of goods on the part of the person to whom such credit is accorded—is the immediate price regulator. Credit may represent money or of its circulation. The rapidity of circulation being given it would depend on the cost of production, and the cost of production being given the quantity of money would depend on the rapidity of its circulation.

¹ *Principles*, vol. ii. p. 83.

² "The permanent value of money—the natural and average prices of commodities—are determined by the cost of producing or of obtaining the precious metals."—*Principles*, vol. ii. p. 64.

it may not, in any event, it signifies the ability to make an effective demand for goods.

The theory of prices thus formulated was completed by a study of the effects flowing from the use of paper currency. An issue of convertible notes, Mill reasoned, will raise prices in the ratio of the new issue to the previously existing amount of metallic currency (under the usual suppositions of static demand, unchanged conditions of production, and unfamiliarity with the use of credit), since it will relieve the precious metals of precisely that amount of money work or "demand" for them.¹ This was not inconsistent with the earlier portions of the theory as he had elaborated it. But, in discussing the effects of inconvertible paper, Mill, in the endeavor to carry his theory to its logical outcome, seems to have neglected some of the fundamental assumptions of his earlier work. He argued that if, by any conceivable mechanism, the quantity of paper in circulation could be kept at the exact level which would be maintained by a metallic currency, it would make no difference whether such paper were convertible or inconvertible, provided that all exchanges must be performed by actual money. But any further increase of the circulation beyond this point must inevitably result in a corresponding rise in prices, since more money is now being offered for goods and consequently their prices must rise.

It is unnecessary to discuss the inconsistency upon which this statement is founded. It ought to be clear that the value of an inconvertible note will depend upon precisely the same circumstances as regulate the value of any bond-note or other obligation, whether of the government or of an individual. Such obligations do not, of course, depend for their value upon the quantity issued, so long as that quantity is within the limits of solvency; and this character of such notes as obligations seems to have been overlooked by Mill.

As has already been said, Mill's theory of prices was the first to take account of the modern phenomena of exchange, and it might therefore have been expected that it would receive very

¹ *Principles*, vol. ii. p. 33.

general acceptance among economists. But although, at the present time, it is unreservedly adopted by very many writers, while others have only slightly modified it, it has been in great measure misinterpreted, and has given place to a crude quantity theory. The progress made by English economists immediately after Mill in the theory of prices was not marked. Jevons recurred to something like the older quantity theory, asserting that "prices temporarily may rise and fall independently of the quantity of gold in the country; ultimately they must be governed by this quantity,"¹ and defined rapidity of circulation, not, like Mill, as "the average number of purchases made by each piece in order to effect a given pecuniary amount of transactions,"² but as "the average number of exchanges effected by each piece of money in a given time, such as a year."³ This retrogression from the position taken by Mill is largely to be attributed to the influx of the new gold. The general hazy notions which had been pretty thoroughly expelled from the public mind were revived and strengthened by the supposed rise in the prices of all products consequent upon the increase in the money supply. It was probably too much to ask that the general public should distinguish between the effect of a cheapening in the money material (producing a change in the standard) and the effect of an increase in the quantity of money as such, but it might not unreasonably have been expected of trained thinkers on the subject. Curiously enough, circumstances dictated that before the influences of the new gold had been sufficiently disseminated to have become settled and stable, other events afforded a new support to the reasoners who ascribed all changes in prices to variations in the circulation. The alleged demonetization of silver in 1873 and the supposedly consequent decline of prices were seized upon as giving additional support to the quantity theory. Even at the present time, it furnishes in England as well as elsewhere one of the commonest arguments in support of

¹ *Investigations in Currency and Finance.*

² *Principles*, vol. ii. p. 33.

³ *Money and the Mechanism of Exchange*, p. 336.

the doctrine, and a practical argument for faith in it as an adequate theory of prices.

Although the quantity theory has at various times, within recent years, been considered virtually extinct in England, it certainly cannot now be justly so regarded. Among those who have lately reaffirmed their belief in it might be mentioned Professors Marshall,¹ Nicholson² and numerous other competent thinkers.

IV.

In America, the earlier systematic writers on economics have ordinarily taken the doctrine direct from the English school. Among these expositors Bowen stated the theory³ with much clearness, and others have expounded it in outline from the same general point of view.⁴ Bowen, however, was more than ordinarily careful to state definitely and in detail the limiting condition, "other things equal," and he did not go far enough in applying and drawing inferences to be led into the contradictions found in some of the earlier as well as in most of the modern expositions of the quantity theory.

¹ *Testimony before the Herschell Commission*, No. 9629.

² *Essays on Money and Monetary Problems*, etc.

³ "The general principle is that the value of money falls in precisely the same ratio in which its quantity is increased. If the whole money in circulation should be doubled prices would be doubled; if it was only increased one-fourth, prices would rise one-fourth. . . . The principle, however, holds good only under the supposition that the quantity of commodities, the number of exchanges and the number of people having occasion to effect exchanges remain unaltered. Otherwise, if there be an increase in either of these respects, the quantity of money being unchanged, the value of that money will rise, or, if money is increasing, the increase in these other respects may neutralize wholly or in part the depreciation of that money."—*Principles of Political Economy*, p. 402.

⁴ "If there are more dollars in the country than are needed as a circulating medium . . . the exchangeable value of a dollar becomes less."—NEWMAN, *Elements of Political Economy* (1835), p. 132.

"If the supply of the precious metals were precisely such as to correspond to the increase of productiveness and the necessity of increased means of exchange, and to the amount consumed in the arts, prices would still remain as before. . . . If . . . the increase of the precious metals were greater than the increase of productiveness their price would fall."—WAYLAND, *Political Economy*, p. 238.

The first American who really exploited the quantity theory with any thoroughness was President F. A. Walker. In a treatise to which he gave the comprehensive title "Money," he developed the quantity theory along its early, pre-scientific lines, and stated some of its applications to current monetary problems. The expressions of Ricardo and Mill concerning the relation of money to prices were quoted at great length, but the limitations expressly formulated by these writers were, to a considerable extent, neglected. This seems to have arisen from a misconception of the price problem. While it is, of course, readily to be admitted that the exchange of a larger volume of money for a given aggregate of commodities means a higher price per unit of goods, such a formula—proceeding as it does upon an unsupported hypothesis—is merely a restatement of the problem in other terms. Cost of production, for instance, is entirely omitted from the discussion, nor are any of the essential price-making factors taken into account.

The belief according to which prices are made to depend solely upon the relation of the quantity of goods to the quantity of money in circulation, was, however, not applied by President Walker to any save the well-worn hypothesis of a régime where only coin is used in effecting exchange—an hypothesis the contemplation of which, according to President Walker's own later statement, is "enough to make the most faithful soul flinch and shrink." When credit comes into play, a somewhat different principle must necessarily be applied. As we have seen, this new principle had been found by Mill in the idea of purchasing power. Since credit acts in precisely the same way as money in effecting purchases, he had reasoned, it will have precisely the same influence as an equivalent quantity of money, raising the prices of commodities by being offered in exchange for them.¹ President Walker, however, traced the influence of credit to a source precisely the opposite of that indicated by Mill. He ascribed the effect of credit on prices not to the fact that by its

¹ "Money and Credit are . . . exactly on a par in their effect on prices."—MILL, *Principles*, vol. iii. p. 84.

character of purchasing power it heightens the demand for commodities, but to the exactly converse principle that credit relieves the circulating medium of a previously existing demand.¹ This, of course, overlooked the fact that every credit transaction carries with it its own means of payment, since credit is granted only on an adequate pledge of commodities and has no effect either in lowering or raising the demand for actual money. Nevertheless, it could not be overlooked that the prices at which many things exchanged by credit are transferred seem to be wholly independent of the quantity of the circulating medium, and this naturally brought up the question as to what is the special mechanism by which these prices are immediately fixed. President Walker explained it somewhat as follows: At any moment there may be said to be a definite volume of commodities exchanging against a definite quantity of money. The price of these commodities is thus fixed in relation to money, and is, in the estimation of owners, "carried over to the commodities directly exchanged [by other agencies than that of money] or remaining in store."² The doctrine thus originally stated was, at a later time, carried to its logical outcome, and in its final form became a theory stating in effect that prices are not wholly determined by retail transactions, inasmuch as it is a familiar fact that wholesale transactions are practically all performed without the direct use of money of any sort, and hence there is no price-fixing factor to be taken into account in that connection.³ A theory which more thoroughly minimized such influences as the cost of production of commodities as price-making factors could scarcely be imagined.

V.

The quantity theory has not suffered any substantial modification since its treatment by President Walker in his *Money*.

¹ "Every time a barter transaction is substituted for buying and selling, the demand for money is thereby diminished and its value thereby lowered (the supply remaining the same)."—*Money*, p. 65.

² *Money*, p. 65.

³ *Quarterly Journal of Economics*, October 1893.

There certainly is no other adherent who has so faithfully supported it as has he. Nor is there at present any formal text-book which treats the quantity theory as fully as his. Lately, however, there have been various attempts to restate President Walker's version of the theory, or at all events to expound it in an unassailable form. Nor are there wanting many who seem to consider it sufficient merely to express a belief in the doctrine, taking its truth for granted and not going so far as to give the grounds of their opinion. President Andrews and others have expressly attributed the present fall of prices to scarcity of money,¹ without pretending to enter very deeply into the merits of the price-controversy, though the validity of their teachings as to practical proceedings is largely dependent upon its outcome. They have, in fact, taken the quantity theory unreservedly as a competent theory of prices, ignoring the fact that the doctrine as we have just studied it completely shirks the whole question. And curiously enough this superficial character of the doctrine is not denied by even so warm an advocate as President Walker himself. In his very latest utterance on the subject he has said that "those who hold the quantity theory of money *are not bound to prove their case. . . . We advance no fundamental proposition* when we say that prices are determined (other things being equal) in the relation between the demand for and the supply of money."² In view of this statement, it is at least surprising that the quantity theory is so often made the basis of propositions for grave alterations in the present monetary system, and the fact that such proposals constantly make their appearance would of itself suggest that some addition has been made to the doctrine as already outlined. Nevertheless such does not seem to be the case. It is, however, true that, despite the various pro-

¹ "I believe that, owing to the increasing scarcity of full money, goods of nearly all sorts are having to be sold at smaller and smaller prices. The blight upon our business originates in that scarcity of full or exportable money, leading to a continuous and discouraging fall in general prices, which first made production and credit business less and less profitable and at last makes them less and less possible."—E. B. ANDREWS, *Silver and Gold*, p. 304.

² "Relation of Changes in the Volume of the Currency to Prosperity," *Economic Studies of the American Economic Association*, vol. i., No. 1, p. 27.

fessed expositions of the theory which have more or less recently been made by its adherents, it would be difficult from these later statements to get a clear notion of its real content. The obstacles to a definite statement of the theory are frequently described in extreme language, and the doctrine itself is often characterized as indicating merely a tendency and as, in no sense, a complete or authoritative doctrine of prices. This follows quite simply from the statement, now nearly always made, that, to ensure the validity of the quantity theory, all other circumstances must be taken as *constant*. This, of course, can in no concrete instance be the case. But it certainly adds to the difficulty of obtaining an authentic formulation of the doctrine that it is by so many regarded as demanding careful limitation to ensure recognition of its validity.

There is also a certain conflict in the use of terms in different current versions of the theory which would require reconciliation before any thoroughgoing general criticism on the theory as a whole could be passed. A typical and important example of the loose use of terms by certain of the quantity theorists is to be found in the varying and discrepant meanings assigned to so common a word as "money." President Walker, for example, plumes himself on having discarded the word "currency"¹ and takes the word money to include banknotes,² although he draws a distinction between these and credit instruments.³ Professor Nicholson,⁴ though formerly adopting the same point of view, now includes under money only gold or standard money, considering that this was the position of Bagehot and Mill, while Professor Hadley,⁵ who seems to have abandoned the leading notions of the quantity theory, still adheres to it in the case of inconvertible paper, which, like President Walker, he still regards as true money. On the other hand, some go so far as to include under money such means of exchange as credit instruments,⁶

¹ *Money*, Preface.

³ *Ibid.*, p. 398.

⁵ *Economics*, pp. 192 and 197.

² *Ibid.*, p. 398.

⁴ *Money and Monetary Problems*, p. 144.

⁶ HELM, *Joint Standard*, p. 8. "Money includes all instruments of credit which are used as substitutes for coin." See also WILLARD FISHER, "Money and Credit

neglecting the fact that the quantity of these instruments is approximately merely the quantity of business performed on credit, and that not they but only the values they represent can be said to possess any influence upon prices.

There are several other difficulties, analogous to that connected with the use of the word money, which stand in the way of a clear restatement of the quantity theory. However, by comparison of the various bits of exposition on the subject a theory fairly consistent with itself may, if too great nicety in the use of terms is not demanded, be culled from the recent writings of believers in the doctrine.¹ And when thus patched together, it does not seem to be substantially different from the earlier expositions. At the risk of some repetition, the modern quantity theory might rudely be put in some such form as this: Price is simply the expression of a given unit of any commodity in terms of money. Under a given set of general circumstances, with a static demand, the amount of money needed to perform the exchanges of any country is a definite quantity. The production of the precious metals being so slow, cost of production as an element affecting supply may at any moment be neglected. This places the value of money at any moment absolutely under the dominion of demand and supply. The demand, as already said, is at any moment taken as constant. This being true, the supply of money is the absolutely governing factor.² The quan-

Paper in the Modern Market," JOURNAL OF POLITICAL ECONOMY, September 1895.

As a criticism on the logical outcome which must follow from some such a position in a connected form, compare the following: "If by money is meant metallic money, few are bold enough to claim that prices rise and fall with the amount of money in circulation. But if money is made to include credit instruments, then we must be logical and make the quantity of money equal to the amount of confidence in the world; but the ingenuity of man has not yet devised means of measuring that quantity any more than it can assign a value to the sum total of human affection or happiness."—J. C. SCHWAB, *Yale Review*, February 1896, p. 454.

¹ A recent writer has declared that "a careful elaboration of facts and principles will result in a quantity theory *which is essentially the old classical theory of Locke, Hume, Smith, Ricardo and all the rest.*"—WILLARD FISHER, JOURNAL OF POLITICAL ECONOMY, March 1896, p. 248.

² When it is stipulated that "other things are equal" it is implied that population remains the same, commodities are unaltered in amount or in conditions of production,

tity of money can be stretched in any direction so as to equate itself to demand, since it is clear that, when supply is short, we have a régime of "low" prices; when abundant, of "high" ones. So far, it will be understood, the theory has been stated only as it is supposed to apply to a condition of things where coin alone is used. In discussing the effects of the introduction of credit, it becomes necessary to recognize at least two distinct points of view among the expounders of the quantity theory. This necessity arises from the difference in the meanings attached to the word money already commented upon. Certain writers take the position that credit devices are merely a mechanism for relieving the supply of actual money of some of the demand. Thus, while they may affect prices by making coin more plentiful compared with the demand for it, they do not in the least interfere with the function of money in fixing prices, whether these be set at a high or at a low range, since the values attached to such of the total stock of commodities as are actually exchanged for money are transferred to the whole of such stock. The other class of reasoners maintain that, under a credit system, prices are fixed by the quantity of money in circulation plus the quantity of credit instruments used. This view has already been mentioned.

The quantity theory, however, is seen in its most extreme and characteristic form when it is applied to a régime where no coin circulates but irredeemable paper is the sole medium of exchange. To the question what determines the value of such irredeemable paper, the reply is returned that the amount in circulation is the sole regulator of value. Public confidence in redemption plays no part. Government solvency or insolvency is an irrelevant consideration. It makes no difference whether or not the

exchanges are constant in volume, and that the mechanism of exchange remains unaltered in character. Given these invariable elements in the problem, say the quantity theorists, prices are dependent upon alterations in the money supply or quantity of money. And the meaning attached to the word supply in this connection seems to be merely that of *circulation*. Prices, then, depend upon the quantity of money in circulation. This statement of course also proceeds upon the assumption (which may be open to question) that the circulation may be raised or depressed in volume at will.

national promise to pay represents a capacity to meet an obligation; the value depends wholly on the quantity of these promises in circulation.¹

VI.

Such, in outline, is the present position of the quantity theory. As remarked at the outset, however, the main interest attaching to the subject is due very largely to its bearing—real or supposed—upon the current monetary question, and the use which has been made of it in the common popular demands for an increase in the amount of the circulating medium.

It is precisely in this connection that the significance of the whole recent revival of the quantity theory is to be found. The reasoning by which the quantity theory is given its vitality and an immediate importance might be put in a series of propositions thus: High prices cause or accelerate the advent of prosperity. Prices are fixed by the quantity of money in circulation. Hence, to raise prices the volume of the currency should be increased. The corollary drawn is that since the admission of silver to free coinage will increase the quantity of money, the great remedy for all industrial evils is the free coinage of silver.

The first step in this series of theorems is beyond the scope of the present paper. It has been and is so frequently assumed that another appearance of it need excite no wonder. Nor need

¹The statement of Bowen, although not recent, represents accurately the present position of quantity theorists with reference to irredeemable paper. Bowen's statement is as follows: "The depreciation of [paper money] is attributable solely to excess in its issue. If this excess could be prevented, that is, if the amount of paper currency could be kept precisely equal to what the amount of metallic currency would be in case there were no paper in circulation, then there would be no depreciation of the paper, nay, the paper might even command a premium over coin, if the aggregate value of it were made less than what the coin would amount to, and if it were also possible to prevent the importation of specie. . . . The value of paper money not depending at all upon its cost of production is regulated solely by its quantity. A certain determinable sum of money is needed in every nation to effect its current exchanges, and to maintain prices at an equilibrium with the average price of commodities throughout the commercial world. Coin being banished, if the issue of paper money is less than this sum, the paper will command a premium, if greater, it will be at a discount."—*Political Economy*, p. 309. This is the exact position of Professors Hadley and Nicholson at the present time.

it be accounted strange that the quantity theory is found in juxtaposition with the high-prices fallacy. The present is by no means the first time that the two ideas have been associated. "The doctrine," says Mr. Mill (speaking of the quantity theory, "has of late years been the foundation of a greater mass of false theory and erroneous interpretation of facts than any other proposition relating to free interchange;"¹ and these words are as applicable to the present times as they were to those of half a century ago. There can be no doubt that the quantity theory has done yeoman service in the cause of metallic inflation.

The point of concrete interest, then, is the fact that the quantity theory has naïvely been taken to support the current agitation for free coinage of silver, or for international bimetallism. It would, of course, be quite supererogatory to pass any criticism upon such of the demagogues as have made use of this method of argument. It is enough to note that their position is merely the familiar one, that the increase of money which would supposedly result from free coinage would necessarily bring about a rise of prices. Also, it is strongly maintained that the present slight decline in prices has been caused wholly by the curtailment of the supply of money available. The fact that the coinage of a cheaper metal would result merely in transferring the standard of value to a lower level quite irrespective of the quantity of metal in circulation is completely neglected.

But, while the writings of the cruder and more popular agitators may thus be treated in a somewhat cavalierly fashion, the same cannot be done with the expressions of the scientific quantity theorists. It is worth while to note that these latter have—perhaps unconsciously—pursued in substance the same line of argument as the popular writers.² A single example of this

¹ *Principles*, vol. ii. pp. 33-4.

² This seems to be recognized even by the scientific adherents of the quantity theory; *e. g.*, "Most people who in recent years have called attention to the appreciation of gold have given an explanation which implies that there is a very direct relation between the quantity of metallic money and the general level of prices. They have argued that the supplies of gold have fallen off, that gold is hoarded by governments and banks, that silver has been demonetized, whilst on the other hand the

will perhaps suffice. If Professor Nicholson's statement of the quantity theory be accepted as authoritative, it seems that a close analogy between the doctrine as it there appears and the form in which it is found in certain "campaign literature" may be traced. It will be recalled that in the very latest statement of Professor Nicholson he has averred that the controlling factor in fixing prices is the quantity of money, money being specially defined to include only *standard* money, by which would be meant, in such a country as Great Britain, simply gold. This point of view closely resembles that taken in a recent propagandist tract on money, where it is stated that "the quantitative theory of money . . . should always be applied to the quantity of *redemption money*. . . . The exchange value of primary money for the property of the world and *vice versa* fixes the comparative value of the two. So if the quantity of *money* is large the total value of the property of the world will be correspondingly large, as expressed in dollars or money units. If the quantity of money is small, the total value of the property of the world will be correspondingly reduced."¹ Evidently the "redemption money" here referred to is the same as the standard money on which Professor Nicholson bases his statement of the theory. The analogy, however, on this point at least, goes no farther. The tract just mentioned finds a remedy for the evils flowing from supposedly falling prices in free coinage of silver,² overlooking the fact, just pointed out, that the rise in prices which follows such a course could not be explained on the basis of the quantity theory, inasmuch as the quantity theory describes only the effect of increasing the *kind of money current*. It says nothing of the effect of introducing money of less value than that in use. This has been recognized by Professor Nicholson in his express limitation of the quantity principle to the case of an increase in *standard money*. This fact, nevertheless, seems to be entirely forgotten by

volume of trade or the amount of exchanges to be effected has increased. *This explanation really rests on the quantity theory in its simple form.*"—NICHOLSON, *Money and Monetary Problems*, pp. 143-4.

¹ *Coin's Financial School* (Chicago, 1894), p. 96.

² *Ibid.*, p. 96.

President Walker and others. However, it requires but slight attention to the historical evolution of the doctrine to see that a transference of the standard of value from a higher to a lower level is quite outside the scope of the principle which indicates the effect of an increase simply in the quantity of standard money. It ought, then, to be clear that, despite the widespread character of the notion which correlates the demand for free silver with the quantity theory, that doctrine can only by misapplication be made to bear this responsibility.

The same cannot be said of the connection between the quantity theory and the high-prices-prosperity argument. Nowhere is this argument found in a bolder form than in the writings of President Walker: "Looking . . . at a metallic inflation, which, whatever hardships it may bring upon certain persons or classes of persons, *carries no sting of injustice with it*, let us inquire what are its effects upon public prosperity The industry, the activity, the enterprise of the generation upon the stage are heavily weighted by obligations to the past. These obligations cannot be repudiated. . . . But when *this effect is brought about by natural means*, if not too sudden and violent in its operation, I believe it to be wholly beneficial and harmonious economically."¹ The link in the chain of reasoning by which this extreme belief in high and rising prices as a key to prosperity is connected with the quantity of money in circulation is found in the treatment accorded to credit by the modern quantity theorists and the supposed dependence of credit on the amount of money in circulation. Here again an interesting similarity between the expressions of Professor Nicholson and those of "Coin's" treatise, already mentioned, may be observed. In both treatments of the subject the view that credit is based on wealth or commodities is completely neglected. It is forgotten that the basis on which credit is granted is the possession of wealth and the statement is expressly made that the credit system of the present day is based solely on money—"actual money," "redemption money," or, in other words, standard coin. This

¹ *American Economic Association, Economic Studies*, vol. i. No. 1, pp. 33-35.

point of view has been put by Professor Nicholson under the heading, "*All Credit Ultimately Rests on a Metallic Basis.*"¹ And essentially the same is found, in a vulgar form, in the other text referred to,² where credit is described as "built up on primary or redemption money." In either of these instances the tendency to exaggerate the importance of money and to speak of it as the sole basis of credit is to be ascribed to a misunderstanding of the nature of credit as representative of the possession of commodities. Of course, if it be once admitted that credit rests solely upon a basis composed of the legal-tender coin of the country, it seems no more than fair to suppose that, if this basis can be enlarged, by the addition of more coin, the credit "built up on" it may likewise be extended. And, since credit is well known to be equivalent to purchasing power or effective demand for commodities, there seems to be no good reason why, when the quantity theory is accepted, we should not grow rich at once by admitting all sorts of metals to the mints. True, it has already been laid down that prices will rise exactly in the proportion in which coin has been increased, thus raising the prices of all commodities to be purchased with the new accessions of credit, but this difficulty is generally overlooked.

Nor must it be supposed, although we have been discussing Professor Nicholson's views at some length, that he stands alone in agreeing substantially with the popular opinions as just outlined. Not only are most quantity theorists in perfect agreement with him on these points but there are not wanting those who have gone so far as frankly to express their approval, and even admiration, of the objects of the inflationists, basing both upon the belief in the quantity theory which they hold in common with the popular writers.³

¹ "It is well to state in the most emphatic manner that the whole vast superstructure of credit must rest on a metallic basis and if this basis is cut away the whole structure would fall."—NICHOLSON, *Money and Monetary Problems*, p. 74.

² *Coin's Financial School*, pp. 55 *et seq.*

³ See, for example, PRESIDENT E. B. ANDREWS'S article on "The Bimetallist Committee of Boston and New England," *Quarterly Journal of Economics*, April 1894; also the paper by the same author entitled "The Fall of Prices—The Cause and Cure," in *Silver and Gold*, pp. 301–330.

The present paper has not attempted to criticise the quantity theory, save in so far as was necessary to elucidate it fairly. What has been sought has been merely a connected statement of the evolution and present position of the doctrine. It is certain that the quantity theory is still far from extinct, as has sometimes been supposed to be the case. True, scientific opinion is drifting from the side of the older naïve theory of prices, and the quantity theory is gradually losing ground among economists. It is frankly discarded in Germany and by many economists in England and America. Nevertheless, it has lost none of its hold upon the public mind. It has, in the past, played a direct and prominent part in many monetary discussions in this country¹ and is exerting no inconsiderable influence upon the prevailing attitude towards current monetary problems. It is this fact which gives it much more than an historical interest at the present time and entitles it to renewed discussion.

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¹ See, for example, as one out of many instances, *Congressional Globe*, part 1, 2d. session, XXXVII. Congress, 1861-2, p. 688.